



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)	MAIL STOP Reply Brief - Patents
Joon-seop Kwak et al.)	
Application No.: 10/673,251)	Group Art Unit: 2812
Filed: September 30, 2003)	Examiner: SAVITRI MULPURI
For: GAN BASED GROUP III-V NITRIDE)	Confirmation No.: 2845
SEMICONDUCTOR LIGHT-)	
EMITTING DIODE AND METHOD)	
FOR FABRICATING THE SAME)	

RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

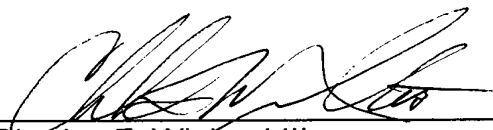
In reply to the Notice of Non-Compliant Appeal Brief dated August 10, 2007, it is the undersigned's understanding that the Office was not satisfied with the summary of the claimed subject matter insofar as it omitted page and line numbers when describing the invention of the independent claims. While this may be an overly technical interpretation requirement, Applicants gladly supply the section of the original Appeal Brief entitled "V. Summary of Claimed Subject Matter" as attached hereto.

Respectfully submitted,

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V. Summary of Claimed Subject Matter

The claim sets are divided into two categories. Claims 1-4, 6, 9-22 are supported by the light emitting diode (LED) embodiments shown in Figures 5-8. This grouping of claims is further divided into two sets. Claim 1 and dependent claims 3, 4, 6 and 9-11 are supported by the LED embodiments of Figures 5 and 7, whereas independent claim 12 and dependent claims 13-22 are supported by the LED embodiments of Figures 6 and 8.

Claims 23-27, 31-35 are supported by the laser diode embodiments of Figures 17-22.

Claim 1

Claim 1 recites a method for fabricating a light-emitting device. See, p. 11, line 1 through page 13, line 18, exemplary Embodiments 1-4, for example. The exemplary list-emitting devices include sequentially forming a first compound semiconductor layer (Figs. 5 and 7, 58, p. 11, lines 25-34, for example), an active layer (56, p. 11, lines 19-25, for example) and a second compound semiconductor layer (54, p. 11, lines 9-18, for example), which are for inducing light emission, on a high-resistant substrate (60, p. 11, lines 2-6, for example).¹ In Figures 5 and 7, a *light-transmitting* conductive layer (50, p. lines 2-6, for example) is located on the second compound semiconductor layers -- meaning that light is emitted from the top

¹ The inclusion of reference numbers in this description is done to facilitate consideration of the claims by showing support therefor in the originally filed specification. The claims are not limited to these specific embodiments.

surface of the LED as depicted in Figures 5 and 7. The method further includes dry etching a region (Fig. 5, 62, p. 12, lines 1-13, for example; Fig. 7, areas other than 60a) of the high-resistant substrate using a reaction gas comprising at least Cl_2 or BCl_3 to expose the first compound semiconductor layer (p. 24, line 30 through p. 25, line 2). The last step of independent claim 1 includes forming a light-shielding conductive layer (Figs. 5 and 7, 64 and 80, respectively, p. 12, lines 4-8 and p. 13, lines 5-8, for example).

The embodiments covered by claim 12 are similar in structure but the reflective and light transmitting conductive layers are reversed in orientation. Specifically, in Figures 6 and 8, a light *reflecting* conductive layer 70 is placed on the second compound semiconductor layer as in the embodiment shown in Figure 8. See, p. 12, lines 14-26 and p. 13, lines 10-18, for example. The light transmitting conductive layer (Figure 6, 72; Figure 8, 82) covers the exposed region on the first compound semiconductor layer.

As will be apparent from the discussion in the arguments section, claims 1 and 12 are independently patentable with respect to one another because of the relative location of the light transmitting and light reflecting conductive layers. With respect to independent claim 16, the additional recitation, compared to claim 12, of the high-resistant substrate being dry etched using a reaction gas comprising at least Cl_2 or BCl_3 is also separately patentable. See p. 24, line 30 through p. 25, line 2, for example.

With respect to claim 23 and the laser diode embodiments of Figures 9-22 for instance, the present invention is embodied in a method of fabricating a light-emitting device (e.g., a laser diode) which includes forming a material layer (Figs. 9-22, 152,

158, 160, 162, p. 13, line 19 through p. 14, line 17, p. 15, line 17 through p. 16, line 29, for instance) on a high-resistant substrate (150). The method includes forming a first electrode (154, p. 14, lines 3-4, for example) on the material layer. As recited in claim 23, the method includes dry etching a region (Figure 10, h3; Figure 11, h4, Figure 12, unmarked; Figures 13-22, horizontal area other than 150) of the high-resistant substrate using a reaction gas comprising at least Cl_2 or BCl_3 to expose a region of the material layer (p. 24, line 30 through p. 25, line 2). Finally, claim 23 recites forming a second electrode (156) on the bottom of the high-resistant substrate to cover partially or fully the exposed region of the material layer (p. 14, lines 23-34, for example).